




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MD 20755-5350



DATE : August 4, 2003
SUBJECT: Region III Data QA Review
FROM : Fredrick Foreman 
Region III ESAT RPO (3ES20)
TO : Lorie Baker
Regional Project Manager (3HS34)

Attached is the inorganic data validation report for the Elkton Farm site (Case #: 31736, SDG#: MC01K1) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at (410) 305-2629.

Attachments

cc: Chris Hartman (MDE)

TO File #: 0011

TDF#: 0717

ANALYTICAL SERVICES AND QUALITY ASSURANCE BRANCH



DATE: July 31, 2003

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 31736
SDG: MC01K1
Site: Elkton Farms

FROM: Jeffrey Emanuel *jae*
Inorganic Data Reviewer

Mahboobeh Mecanic *m.m.*
Senior Oversight Chemist

TO: Fredrick Foreman
ESAT Region 3 Project Officer

OVERVIEW

Case 31736, Sample Delivery Group (SDG) MC01K1, from the Elkton Farms site consisted of nine (9) filtered and nine (9) unfiltered aqueous samples analyzed for dissolved metals and total metals/cyanide (CN⁻), respectively, by Chemtech Consulting Group (CHEM). The sample set included two (2) field blanks and two (2) field duplicate pairs. The samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.2 through the Routine Analytical Services (RAS) program.

SUMMARY

All samples were successfully analyzed for all Target Analyte List (TAL) parameters.

Data in this Case have been impacted by outliers reported in laboratory blanks, matrix spike, laboratory duplicate, and ICP serial dilution analyses. Details for these outliers are discussed under "Minor Problems, specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on a single Data Summary Form (DSF).

MINOR PROBLEMS

- Continuing Calibration (CCB) and/or Preparation (PBs) Blanks had reported results greater than Method Detection Limits (MDLs) for aluminum (Al), arsenic (As), barium (Ba), beryllium (Be), calcium (Ca), lead (Pb), magnesium (Mg), and mercury (Hg) while the field blank (FB) had reported results greater than IDL for Al, chromium (Cr), iron (Fe), nickel (Ni) and zinc (Zn). Reported results for these analytes in affected samples which are less than five times (<5X) blank concentrations may be biased high and have been qualified "B" on the DSF.
- Continuing Calibration and/or Preparation Blanks had negative results with absolute values greater than MDL for Hg, potassium (K), and silver (Ag). Quantitation limits for these analytes in affected samples may be biased low and have been qualified "UL" on the DSFs.
- The matrix spike recovery was outside the upper control limits (>125%) for Al. Reported results for this analyte may be biased high and have been qualified "K", unless superseded by "B", on the DSFs.

- The matrix spike recovery was low for silver (Ag). Low recoveries may indicate matrix interferences which suppressed the detection of this analyte and/or analyte loss during digestion process. Reported results and quantitation limits for this analyte may be biased low and have been qualified "L" and "UL", respectively, on DSFs unless superseded by "J".
- The laboratory duplicate analysis reported the relative percent difference (RPD) outside the control limit (\pm CRQL, 20% RPD) for zinc (Zn). Reported results regarding this analyte are estimated and have been qualified "J" on DSFs.
- Percent Difference (%D) for the ICP serial dilution analysis was outside control limits ($>10\%$) for K. Reported results regarding this analyte are estimated and have been qualified "J" on DSFs.
- Positive results detected between the MDL and CRQL were qualified "J" on the DSFs unless superseded by "B". The results qualified for this reason were included on the Table 1 only when the "J" superseded a lower qualifier.

NOTES

The concentration values were not rounded correctly for several analytes on the Form Is for samples MC01K6, MC01K8, MC01K9, MC01L1, MC01L4, MC01L7, and MC01L8. The concentrations have been changed, initialed and dated by the validator on the applicable Form Is.

Reported results for field duplicate pairs MC01K5/MC01K8 and MC01L5/MC01L8 were all comparable and within 20% RPD, \pm CRQL.

Data for case 31736, SDG MC01K1, were reviewed in accordance with National Functional Guidelines for Evaluating Inorganic Analyses with Modification for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION

TABLE 1B CODES USED IN COMMENTS COLUMN OF TABLE 1A

APPENDIX A GLOSSARY OF DATA QUALIFIER CODES

APPENDIX B DATA SUMMARY FORMS

APPENDIX C CHAIN OF CUSTODY (COC) RECORDS

APPENDIX D LABORATORY CASE NARRATIVES

**TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION**

Case 31736, SDG MC01K1

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Al	MC01L9	B		High	CCB (69.3J µg/L) MS (147%)
	MC01L1, MC01L2, MC01L3, MC01L4, MC01L5, MC01L6, MC01L7, MC01L8	B		High	FB (207 µg/L) MSH (147%)
	MC01K1, MC01K2, MC01K3, MC01K4, MC01K5, MC01K6, MC01K7, MC01K8 MC01L9	K		High	MSH (147%)
	MC01K9	B		High	CCB (69.3J µg/L)
As	MC01K1, MC01K2, MC01K4	B		High	CCB (2.8J µg/L)
Ba	MC01L9	B		High	PB (2.09 µg/L)
Be	MC01K3, MC01K5, MC01K7, MC01K8,	B		High	CCB (0.5J µg/L)
	MC01L6, MC01L7	B		High	CCB (0.1J µg/L)
Ca	MC01K9	B		High	CCB (19.5 µg/L)
	MC01L9	B		High	CCB (27.5J µg/L)
Cr	MC01L2, MC01L4, MC01L6	B		High	FB (3.0J µg/L)
Cu	MC01K9		UL	Low	CBN (-0.8J µg/L)

**TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION**

Case 31736, SDG MC01K1

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Fe	MC01L1, MC01L2 MC01L3	B		High	FB (129 µg/L)
Pb	MC01K6, MC01L4	B		High	CCB (2.6J µg/L)
Mg	MC01K9	B		High	CCB (23.7J µg/L)
Hg	MC01K1, MC01K2, MC01K4, MC01K5	B		High	CCB (0.1J µg/L)
	MC01K6, MC01K7, MC01K8, MC01K9 MC01L1, MC01L2		UL	Low	CBN (-0.1J µg/L)
	MC01L3, MC01L4, MC01L5, MC01L6, MC01L7, MC01L8 MC01L9		UL	Low	CBN (-0.046J µg/L)
Ni	MC01L1, MC01L2, MC01L3, MC01L4, MC01L5, MC01L6, MC01L7, MC01L8	B		High	FB (4.4J µg/L)
K	All sample except MC01K9, MC01L9	J			ISD (50%)
	MC01K9		UL		CBN (-130.5J µg/L)
	MC01L9		UL		CBN (-151.7J µg/L)

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

Case 31736, SDG MC01K1

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Ag	MC01K1, MC01K2, MC01K3, MC01K4, MC01K5, MC01K6, MC01K7, MC01K9, MC01L1, MC01L3		UL		MSL (52%)
	MC01L4, MC01L5, MC01L6, MC01L7, MC01L8, MC01L9		UL		CBN (-0.5J µg/L) MSL (52%)
	MC01L2	J			>MDL <CRQL MSL (52%)
Zn	MC01K1, MC01K2, MC01K3, MC01K4, MC01K5, MC01K6, MC01K7, MC01K8	B		High	FB (84.1 µg/L) DUP (71%)
	MC01L1, MC01L2, MC01L3, MC01L4, MC01L5, MC01L6, MC01L7, MC01L8	B		High	FB (183 µg/L) DUP (71%)
	MC01K9, MC01L9	J			DUP (71%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

CCB	=	Continuing calibration blanks had results >MDL (the results are in parenthesis). Reported results which are <5X the blank concentration may be biased high.
MSH	=	Matrix spike recoveries were high, >125% (%R are in parenthesis). Reported results may be biased high.
PB	=	Preparation blanks had results > MDLs (results are in parenthesis). Reported results which are <5X the blank concentration may be biased high.
FB	=	Field blanks had results > MDLs (results are in parenthesis). Reported results which are <5X the blank concentration may be biased high.
CBN	=	Continuing Calibration Blanks had negative results with absolute values greater then MDLs (the results are in parenthesis). Reported results <2X absolute value of the blank concentration and quantitation limits may be biased low.
MSL	=	The matrix spike recovery was low, <75% (%R is in parenthesis). Reported results and quantitation limits may be biased low.
ISD	=	Percent Difference (%D) for ICP serial dilution analysis was outside of control limits (%D >10% is in parenthesis). Reported results are estimated.
>MDL <CRQL	=	Reported results were greater than Method Detection Limit but less than Contract Required Quantitation Limit.
DUP	=	The relative percent difference (RPD) for the laboratory duplicate analysis was outside of control limits, 20% RPD (RPD is in parenthesis). Reported results are estimated.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Page 1 of 4

Case #: 31736

SDG: MC01K1

Number of Soil Samples: 0

Site:

ELKTON FARMS

Number of Water Samples: 18

Lab.:

CHEM

TOTAL METALS

Sample Number :		MC01K1		MC01K2		MC01K3		MC01K4		MC01K5	
Sampling Location :		GWT1		GWT2		GWT3		MW1		MW2	
Field QC										DUP (MC01K8)	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/2003		05/21/2003		05/21/2003		05/21/2003		05/21/2003	
Time Sampled :		09:30		10:00		10:30		08:50		09:40	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	14900	K	43900	K	1550	K	31500	K	3920	K
ANTIMONY	60										
*ARSENIC	15	7.7	B	9.6	B			8.6	B		
BARIUM	200	417		751		90.3	J	609		188	J
BERYLLIUM	5	7.7		12.4		1.1	B	14.3		0.73	B
*CADMIUM	5										
CALCIUM	5000	32300		38900		16000		41600		31800	
*CHROMIUM	10	49.4		134		4.7	J	104		10.6	
COBALT	50	25.2	J	42.3	J	6.6	J	54.9		6.5	J
COPPER	25	49.6		41.7		15.7	J	27.3		26.3	
IRON	100	32900		72900		4800		73200		10000	
*LEAD	10	11.6		26.0				28.5		11.7	
MAGNESIUM	5000	23100		73300		11500		28600		19800	
MANGANESE	15	448		1310		113		1250		349	
MERCURY	0.2	0.12	B	0.06	B			0.13	B	0.11	B
*NICKEL	40	36.1	J	64.4		8.4	J	57.0		7.9	J
POTASSIUM	5000	2920	J	24400	J	1360	J	7630	J	4590	J
SELENIUM	35										
SILVER	10		UL		UL		UL		UL		UL
SODIUM	5000	4990	J	4290	J	3030	J	29100		5210	
THALLIUM	25										
VANADIUM	50	78.6		192		7.8	J	113		8.9	J
ZINC	60	205	B	287	B	120	B	387	B	104	B
*CYANIDE	10										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 2 of 4

Case #: 31736

SDG : MC01K1

Site :

ELKTON FARMS

Lab. :

CHEM

Sample Number :		MC01K6		MC01K7		MC01K8		MC01K9		MC01L1	
Sampling Location :		MW3		MW4		MW5		MW6		DMGW/T1	
Field QC						DUP (MC01K5)		FIELD BLANK			
Matrix :		Water		Water		Water		Water		FILTRATE	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/2003		05/21/2003		05/21/2003		05/21/2003		05/21/2003	
Time Sampled :		11:00		11:15		09:40		11:45		09:30	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	2440	K	5040	K	4870	K	39.0	B	32.4	B
ANTIMONY	60										
*ARSENIC	15	6.0	J								
BARIUM	200	120	J	122	J	205				100	J
BERYLLIUM	5	1.7	J	1.7	B	0.82	B				
*CADMIUM	5										
CALCIUM	5000	15800		16600		32700		47.3	B	14200	
*CHROMIUM	10	7.2	J	18.6		12.8		0.80	J		
COBALT	50	14.9	J	20.1	J	7.7	J			1.8	J
COPPER	25	20.9	J	36.9		29.5			UL	1.4	J
IRON	100	7030		21000		12200		31.7	J	47.9	B
*LEAD	10	4.9	B			11.0					
MAGNESIUM	5000	8480		12500		20500		84.0	B	9800	
MANGANESE	15	343		487		406				85.2	
MERCURY	0.2		UL		UL		UL		UL		UL
*NICKEL	40	25.5	J	60.9		9.0	J			6.8	B
POTASSIUM	5000	1540	J	641	J	5090	J		UL	1280	J
SELENIUM	35										
SILVER	10		UL		UL		UL		UL		UL
SODIUM	5000	7340		10100		5390				4380	J
THALLIUM	25										
VANADIUM	50	11.8	J	27.5	J	11.2	J				
ZINC	60	61.5	B	99.6	B	142	B	84.1	J	114	B
*CYANIDE	10										Q

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 3 of 4

Case #: 31736

SDG: MC01K1

Site:

ELKTON FARMS

Lab.:

CHEM

DISSOLVED METALS

Sample Number :		MC01L2		MC01L3		MC01L4		MC01L5		MC01L6	
Sampling Location :		DMGWT2		DMGWT3		DMMW1		DMMW2		DMMW3	
Field QC								DUP (MC01L8)			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		05/21/2003		05/21/2003		05/21/2003		05/21/2003		05/21/2003	
Time Sampled :		10:00		10:30		08:50		09:40		11:00	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	88.4	B	43.1	B	356	B	27.1	B	61.7	B
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200	74.7	J	71.6	J	68.0	J	93.3	J	46.3	J
BERYLLIUM	5					0.72	J			0.20	B
*CADMIUM	5										
CALCIUM	5000	17300		14100		11600		25100		9730	
*CHROMIUM	10	1.6	B			1.7	B			0.90	J
COBALT	50	3.7	J	2.7	J	8.5	J	2.3	J	6.5	J
COPPER	25	2.2	J	1.8	J	9.5	J				
IRON	100	52.2	B	17.1	B	1220		765		1240	
*LEAD	10					3.4	B				
MAGNESIUM	5000	24000		10200		6000		15000		5930	
MANGANESE	15	75.0		121		221		194		240	
MERCURY	0.2		UL		UL		UL		UL		UL
*NICKEL	40	7.6	B	4.1	B	10.4	B	4.1	B	9.7	B
POTASSIUM	5000	4110	J	1040	J	1020	J	2790	J	1160	J
SELENIUM	35										
SILVER	10	1.4	J		UL		UL		UL		UL
SODIUM	5000	288000		2780	J	26800		4790	J	6450	
THALLIUM	25										
VANADIUM	50	1.4	J			1.5	J				
ZINC	60	102	B	73.5	B	81.6	B	75.1	B	86.6	B
*CYANIDE	10		Q		Q		Q		Q		Q

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 4 of 4

Case #: 31736

SDG: MC01K1

Site:

ELKTON FARMS

Lab.:

CHEM

DISSOLVED METALS

Sample Number :		MC01L7		MC01L8		MC01L9					
Sampling Location :		DMMW4		DMMW5		DMMW6					
Field QC				DUP (MC01L5)		FIELD BLANK					
Matrix :		Water		Water		Water					
Units :		ug/L		ug/L		ug/L					
Date Sampled :		05/21/2003		05/21/2003		05/21/2003					
Time Sampled :		11:15		09:40		11:45					
Dilution Factor:		1.0		1.0		1.0					
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	45.4	B	32.2	B	207	K				
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200	40.3	J	97.5	J	4.1	B				
BERYLLIUM	5	0.25	B								
*CADMIUM	5										
CALCIUM	5000	8490		26500		70.5	B				
*CHROMIUM	10					3.0	J				
COBALT	50	4.8	J	3.1	J						
COPPER	25			1.7	J						
IRON	100	1580		890		129					
*LEAD	10										
MAGNESIUM	5000	7080		15700		453	J				
MANGANESE	15	234		212		1.1	J				
MERCURY	0.2		UL		UL		UL				
*NICKEL	40	11.5	B	5.0	B	4.4	J				
POTASSIUM	5000	368	J	2830	J		UL				
SELENIUM	35										
SILVER	10		UL		UL		UL				
SODIUM	5000	9550		5050							
THALLIUM	25										
VANADIUM	50										
ZINC	60	90.1	B	80.3	B	183	J				
*CYANIDE	10		Q		Q		Q				

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Appendix C

Chain-of-Custody Records



USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31736
DAS No: R31583

R

Region: 3	Date Shipped: 5/21/2003	Chain of Custody Record	Sampler Signature:		
Project Code:	Carrier Name: FedEx				
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239272	Relinquished By	(Date / Time)	Received By	(Date / Time)
CERCLIS ID: MDD985407196	Shipped to: Chemtech Consulting Group (CHEM) 284 Sheffield Street Mountainside NJ 07092 (908) 789-8900	1			
Spill ID: 037Z		2			
Site Name/State: ELKTON FARM/MD		3			
Project Leader: Alex Cox		4			
Action: Preliminary Assessment					
Sampling Co: MDE					

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01K1	Ground Water/ Glfawossen Tefera	L/G	CN (21), ICP/AES (21)	1284 (HNO3), 1289 (NaOH) (2)	GWT1	S: 5/21/2003	9:30	C01K1	--
MC01K2	Ground Water/ Brian Dietz	L/G	CN (21), ICP/AES (21)	1292 (HNO3), 1297 (NaOH) (2)	GWT2	S: 5/21/2003	10:00	C01K2	--
MC01K3	Ground Water/ Glfawossen Tefera	L/G	CN (21), ICP/AES (21)	1300 (HNO3), 1305 (NaOH) (2)	GWT3	S: 5/21/2003	10:30	C01K3	--
MC01K4	Ground Water/ Dixon Wood	L/G	CN (21), ICP/AES (21)	1308 (HNO3), 1313 (NaOH) (2)	MW1	S: 5/21/2003	8:50	C01K4	--
MC01K5	Ground Water/ Dixon Wood	L/G	CN (21), ICP/AES (21)	1316 (HNO3), 1321 (NaOH) (2)	MW2	S: 5/21/2003	9:40	C01K5	--
MC01K6	Ground Water/ Dixon Wood	L/G	CN (21), ICP/AES (21)	1324 (HNO3), 1325 (HNO3), 1338 (NaOH), 1339 (NaOH) (4)	MW3	S: 5/21/2003	11:00	C01K6	MS/MSD
MC01K7	Ground Water/ Brian Dietz	L/G	CN (21), ICP/AES (21)	1344 (HNO3), 1349 (NaOH) (2)	MW4	S: 5/21/2003	11:15	C01K7	--
MC01K8	Ground Water/ Dixon Wood	L/G	CN (21), ICP/AES (21)	1352 (HNO3), 1357 (NaOH) (2)	MW5	S: 5/21/2003	9:40	C01K8	Field Duplicate <i>OF mw-2</i>
MC01K9	Ground Water/ Chris Hartman	L/G	CN (21), ICP/AES (21)	1360 (HNO3), 1365 (NaOH) (2)	MW6	S: 5/21/2003	11:45	C01K9	Field Blank
MC01L1	Ground Water/ Glfawossen Tefera	L/G	DM (21)	1370 (HNO3) (1)	DMGWT1	S: 5/21/2003	9:30		--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: MC01K6	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, ICP/AES = CLP TAL Total Metals+Hg ICP-AES	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-592370820-052103-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY



USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31736
DAS No: R31583

R

Region: 3	Date Shipped: 5/21/2003	Chain of Custody Record	Sampler Signature:
Project Code:	Carrier Name: FedEx		
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239272	Relinquished By (Date / Time)	Received By (Date / Time)
CERCLIS ID: MDD985407196	Shipped to: Chemtech Consulting Group (CIEM) 284 Sheffield Street Mountainside NJ 07092 (908) 789.8900	1	
Spill ID: 0372		2	
Site Name/State: ELKTON FARM/MD		3	
Project Leader: Alex Cox		4	
Action: Preliminary Assessment			
Sampling Co: MDE			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No / PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECTION DATE/TIME	INORGANIC SAMPLE No.	Lab Type
MC01L2	Ground Water/ Brian Dietz	L/G	DM (21)	1371 (HNO3) (1)	DMMW12	S: 5/21/2003 10:00		
MC01L3	Ground Water/ Glenwood Isola	L/G	DM (21)	1372 (HNO3) (1)	DMMW13	S: 5/21/2003 10:30		
MC01L4	Ground Water/ Dixon Wood	L/G	DM (21)	1373 (HNO3) (1)	DMMW1	S: 5/21/2003 8:50		
MC01L5	Ground Water/ Dixon Wood	L/G	DM (21)	1374 (HNO3) (1)	DMMW2	S: 5/21/2003 9:40		
MC01L6	Ground Water/ Dixon Wood	L/G	DM (21)	1375 (HNO3), 1376 (HNO3) (2)	DMMW3	S: 5/21/2003 11:00		MS/MSD
MC01L7	Ground Water/ Brian Dietz	L/G	DM (21)	1377 (HNO3) (1)	DMMW4	S: 5/21/2003 11:15		
MC01L8	Ground Water/ Dixon Wood	L/G	DM (21)	1378 (HNO3) (1)	DMMW5	S: 5/21/2003 9:40		Field Duplicate of DMMW2
MC01L9	Ground Water/ Chris Hartman	L/G	DM (21)	1379 (HNO3) (1)	DMMW6	S: 5/21/2003 11:45		Field Blank

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: MC01K8	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment loaded? _____
CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, ICP/AES = CLP TAL Total Metals+Hg ICP-AES			

TR Number: 3-592370820-052103-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

U.S. EPA Region III Sample Scheduling Request Form

RAS CASE No: CT1809 / 31736		DAS No:		NSF No:	
Date: 5/14/03		Data Validation Level: M3, IM2		EPA Lab Reply:	
Site Name: Elkton Farm				QAPP/SAP Info :	
Address: 183 Zeitler Road			City: Elkton		State: Maryland
Latitude:		Longitude:		Anal +Val Data TAT: 60 Days	
Program: CERCLA		CERCLIS No: MDD985407196		Activity: SI	
Account No: 03T03N50102D037ZLA00		Operable Unit: 00		Spill ID: 037Z	
Preparer: Chris Hartman		RPM/PO: Lorie Baker		Site Leader: Alex Cox	
Phone: 410-537-3453		Phone: 215-814-3355		Phone: 410-537-3493	
FAX: 410-537-3472		FAX: 215-814-3001		FAX: 410-537-3472	
E-mail: chartman@mde.state.md.us		E-mail: baker.lorie@epa.gov		E-mail: acox@mde.state.md.us	
EPA CO:		Contract Type:	Prime: MDE		Sub:
Lab Assignment Date:		Analytical TAT: 30 Days		Ship Date From: 5/19/03	
Organic Lab:				Ship Date To: 5/23/03	
Inorganic Lab:				Carrier:	

SAMPLES	METHOD	PARAMETER	MATRIX
9	OLM04.3	TCL	AQ
1	OLM04.3	VOC	AQ
12	ILM05.2	ICP-AES TAL+CN+Hg	AQ
9	ILM05.2	ICP-AES TAL (DM)	AQ

Notes:
 1. Quantitation Limits and Quality Control requirements other than those specified in the method or SOW must be included on separate sheet.
 2. QC filed samples must be included as part of the total number of samples.
 3. Data validation levels M3 and IM2 require justification.

Special Instructions:

Sunny Patel

From: Sturdavant, Holly [Holly.Sturdavant@dyncorp.com]
Sent: Tuesday, May 27, 2003 9:24 AM
To: Divya (E-mail); Sunny Patel (E-mail)
Cc: Betty Ann Jeffery (E-mail); Dan Slizys (E-mail); John Kwedar (E-mail); Khin-Cho Thaung (E-mail)
Subject: Region 03 | Case 31736 | Lab CHEM | Issue Insufficient/inappropriate designation of laboratory QC | FINAL

Sunny,

Following is the resolution from Region 3 regarding the DM lab QC issue for Case 31736. Per the Region, the lab will place both the TM/CN samples and the DM samples in the same SDG. The lab will only perform lab QC on the designated TM/CN sample.

Please let me know if you have any other questions or problems.

Thanks,
Holly

Holly Rogers Sturdavant
CSC
CLP Coordinator for Regions 3, 7, & 9
703-264-9526
holly.sturdavant@dyncorp.com or holly.rogers@dyncorp.com

This is a PRIVATE message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind CSC to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

-----Original Message-----

From: slizys.dan@epamail.epa.gov [mailto:slizys.dan@epamail.epa.gov]
Sent: Tuesday, May 27, 2003 6:40 AM
To: Sturdavant, Holly
Cc: Betty Ann Jeffery (E-mail); John Kwedar (E-mail); Khin-Cho Thaung (E-mail)
Subject: Re: NEW ISSUE | Case 31736 | Lab CHEM | Issue Insufficient/inappropriate designation of laboratory QC

Holly,

The lab does not have to perform QC for DM fraction. They should retain all samples in one SDG.

From: "Sturdavant, Holly" <Holly.Sturdavant@dyncorp.com>

To: Betty Jeffery/ESC/R3/USEPA/US@EPA, Dan Slizys/ESC/R3/USEPA/US@EPA, John Kwedar/ESC/R3/USEPA/US@EPA, Khin-Cho Thaung/ESC/R3/USEPA/US@EPA

cc:
Subject: NEW ISSUE | Case 31736 | Lab CHEM | Issue Insufficient/inappropriate designation of laboratory QC

05/23/2003 05:01 PM

The lab is still waiting on a resolution to this issue. Please advise on how the lab should proceed.

Thanks,
Holly

000156

Holly Rogers Sturdavant
CSC
CLP Coordinator for Regions 3, 7, & 9
703-264-9526
holly.sturdavant@dyncorp.com or holly.rogers@dyncorp.com

This is a PRIVATE message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind CSC to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

-----Original Message-----

From: Sturdavant, Holly
Sent: Thursday, May 22, 2003 4:48 PM
To: Betty Ann Jeffery (E-mail); Dan Slizys (E-mail); John Kwedar (E-mail); Khin-Cho Thaug (E-mail)
Subject: NEW ISSUE | Case 31736 | Lab CHEM | Issue
Insufficient/inappropriate designation of laboratory QC

Following is an email from CHEM regarding samples received for Case 31736. The lab received 9 TM/CN samples and 9 DM samples for this Case. Only one sample was designated on the TR/COC for lab QC (TM/CN sample MC01K6). The lab would like to know if they should perform lab QC on one of the DM samples.

Please advise on how the lab should proceed.

Thanks,
Holly

Holly Rogers Sturdavant
CSC
CLP Coordinator for Regions 3, 7, & 9
703-264-9526
holly.sturdavant@dyncorp.com or holly.rogers@dyncorp.com

This is a PRIVATE message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind CSC to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

-----Original Message-----

From: Sunny Patel [mailto:Sunny@Chemtech.net]
Sent: Thursday, May 22, 2003 3:04 PM
To: Sturdavant, Holly
Subject: RE: Region 3 | Case # 31736 | CHEM | 68W02068 | Issue about QC

REVISED

Hi Holly,

Lab received 9 samples for TM/CN & 9 samples for Diss Metals. On TR they marked QC sample MC01K6 for TM/CN & they did not marked sample MC01L6 as a QC sample in TR.

Thanks,
Sunny.

000157

> -----Original Message-----
> From: Sturdavant, Holly [SMTP:Holly.Sturdavant@dyncorp.com]
> Sent: Thursday, May 22, 2003 3:08 PM
> To: 'Sunny Patel'
> Subject: RE: Region 3 | Case # 31736 | CHEM | 68W02068 | Issue about
> QC | REVISED
>
> Sunny,
>
> What is the total number of samples that the lab received for this Case?
> Region 3 generally does not require separate lab QC for DM if both the
> total
> metals and dissolved metals can be placed in the same SDG.
>
> Please let me know.
>
> Thanks,
> Holly
>
> Holly Rogers Sturdavant
> CSC
> CLP Coordinator for Regions 3, 7, & 9
> 703-264-9526
> holly.sturdavant@dyncorp.com or holly.rogers@dyncorp.com
>

> -
> -----
> This is a PRIVATE message. If you are not the intended recipient,
> please
> delete without copying and kindly advise us by e-mail of the mistake
> in
> delivery. NOTE: Regardless of content, this e-mail shall not operate
> to
> bind
> CSC to any order or other contract unless pursuant to explicit written
> agreement or government initiative expressly permitting the use of
> e-mail
> for such purpose.
> -----
>

> -----Original Message-----
> From: Sunny Patel [mailto:Sunny@Chemtech.net]
> Sent: Thursday, May 22, 2003 2:56 PM
> To: Sturdavant, Holly
> Subject: RE: Region 3 | Case # 31736 | CHEM | 68W02068 | Issue about
> QC
> | REVISED
> Importance: High
>
>

> Hi Holly,
>
> Lab received 2 bottle for sample MC01L6 for Diss Metals. Can lab use
> this
> samples as a QC samples.
>
> Please let lab know ASAP.
>
> Thanks,
> Sunny
>

> > -----Original Message-----
> > From: Sunny Patel
> > Sent: Thursday, May 22, 2003 2:38 PM
> > To: 'holly.sturdavant@dyncorp.com'
> > Subject: Region 3 | Case # 31736 | CHEM | 68W02068 |
> > Issue about QC

000158

> > Importance: High
> >
> >
> > Hi Holly,
> >
> > On TR they marked Case is complete & they marked only 1 QC samples
for
> > TM/CN. Lab also received Diss Metals samples for this case no QC on
TR.
> > Lab like to know QC is required for Diss Metals samples.
> >
> > Please let lab know ASAP.
> >
> > Thanks,
> > Sunny.

000159

Appendix D

Laboratory Case Narrative

COVER PAGE

Lab Name: CHEMTECH CONSULTING GROUP

Contract: 68-W0-2068

Lab Code: CHEM

Case No.: 31736

NRAS No.:

SDG No.: MC01K1

SOW No.: ILM05.2

EPA SAMPLE NO.

MC01K1
MC01K2
MC01K3
MC01K4
MC01K5
MC01K6
MC01K6D
MC01K6S
MC01K7
MC01K8
MC01K9
MC01L1
MC01L2
MC01L3
MC01L4
MC01L5
MC01L6
MC01L7
MC01L8
MC01L9

Lab Sample ID.

R2606-01
R2606-02
R2606-03
R2606-04
R2606-05
R2606-06
R2606-07
R2606-08
R2606-09
R2606-10
R2606-11
R2606-12
R2606-13
R2606-14
R2606-15
R2606-16
R2606-17
R2606-18
R2606-19
R2606-20

ICP-AES ICP-MS

Were ICP-AES and ICP-MS interelement corrections applied?

(Yes/No) YES

Were ICP-AES and ICP-MS background corrections applied?

(Yes/No) YES

If yes-were raw data generated before application of background corrections?

(Yes/No) NO

Comments:

The "E" qualifiers on Form I and IX for Potassium indicate chemical or physical interference effects, which were suspected during that element's analyses only.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mildred V. ReyesName: MILDRED V. REYES
Title: QA/QC DIRECTORDate: 6/10/03

COVER PAGE

ILM05.2

000005

CHEMTECH

SDG NARRATIVE

USEPA

SDG # MC01K1

CASE # 31736

CONTRACT # 68-W0-2068

LAB NAME: CHEMTECH CONSULTING GROUP

LAB CODE: CHEM

CHEMTECH PROJECT #R2606

A. Number of Samples and Date of Receipt

18 Water samples were delivered to the laboratory intact on 05/22/03.

B. Parameters

Test requested for Total and Dissolved Metals and Cyanide.

C. Cooler Temp

Indicator Bottle: Presence/Absence

Cooler Temp: 5°C

D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):

The lab received 9 TM/CN samples and 9 DM samples for this Case. Only one sample was designated on the TR/COC for lab QC (TM/CN sample MC01K6). The lab would like to know if Lab should perform lab QC on one of the DM samples.

For details, please check the attached E-mail Communication page at the end of the Data Package.

E. Corrective Action taken for above:

Following is the resolution from Region 3 regarding the DM lab QC issue for Case 31736. Per the Region, the lab will place both the TM/CN samples and the DM samples in the same SDG. The lab will only perform lab QC on the designated TM/CN sample.

For details Regional Resolutions, please check the attached E-mail Communication page at the end of the Data Package.

F. Analytical Techniques:

All analyses were based on CLP Methodology by method ILM05.2

000006

CHEMTECH

Note (For Aqueous Cyanide analysis): Aqueous Cyanide Samples were tested for the Presence for Sulfide and Oxidizing agents, however, results found no indication of Sulfide and Oxidizing agents. Magnesium Chloride Solution also added.

G. Calculation:

Conversion of results from mg/L to mg/kg (Dry Weight Basis):

$Mg/Kg = (Result\ in\ mg/L) \times 1000 \times 100 / \% \text{ Solid} \times \text{Fraction of Sample Amount Taken in Prep.}$

Factor of Sample Amount Taken in Prep:

For Cyanide = 20 (Where Initial Sample Wt. Taken is 1.00 g and Final Volume is 50 ml.)

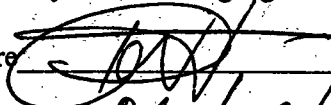
If the Initial Sample Wt. Is 1.01 g, then the Factor would be $20 \times 1.01 = 20.2$

G. QA/ QC

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate the presence of contamination. Laboratory Control sample was within control limits. Spike sample did met requirements except for Silver and Aluminum. Most of the elements of Duplicate sample did met requirements except for the Zinc. Serial Dilution did met requirements except for the Potassium.

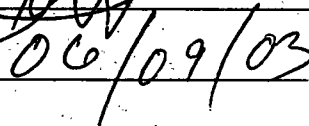
I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature



Name: Parveen Hasan

Date



Title: QA/QC

000007